

Date: Tuesday, 8/21/2007 3:40:35 PM  
 By: Kim Johnston

## Process Sheet

38

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: FWD X-TUBE EXT HEIGHT(-013)
Job Number	: 34164		
Estimate Number	: 10565		
P.O. Number	: N/A	Part Number	: D205596105
This Issue	: 8/21/2007 S.O. No. : N/A	Drawing Number	: D205596105
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: N/A Type : LANDING GEAR	Drawing Revision	: A
Previous Run	: 31971	Material	: N/A
Written By	: <u>[Signature]</u>	Due Date	: 9/20/2007
Checked & Approved By	: <u>[Signature]</u>	Qty:	1 Um: Each
Comment	: Est Rev: 05.03.21 Added bending procedure KJ/JLM		

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	DC	DOCUMENT CONTROL
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DS1396 (1)  
 28 07.11.07

Comment: DOCUMENT CONTROL

Photocopy D205-594 bluefile &amp; type labels per PPP D205-596-105 CHG002

W & S 01/12/06

2.0	D2889	FWD Crosstube
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Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part number Description Batch

1 D2889 Aft Crosstube B35185

EL 7-10-22

3.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1
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Comment: LANDING GEAR RESOURCE 1

Mark 23.92" for cutting from tangential line in the straight section from D2889 as per Dwg wall template. EL 7-10-22

4.0	QC15	DIMENSIONAL CHECK OF X-TUBES
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Comment: DIMENSIONAL CHECK OF X-TUBES

10-10-22 (1)

5.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1
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Comment: LANDING GEAR RESOURCE 1

1-Cut as per Dwg D205-596-105

EL/SR 7-10-22

2-Deburr &amp; Inspect for surface damage. Polish cut surface. Scribe part # and batch # on one end of tube.

AWM  
 07-10-24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Tuesday, 8/21/2007 3:40:35 PM

User: Kim Johnston

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Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD X-TUBE EXT HEIGHT(-013)

Job Number: 34164

Part Number: D205596105

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

QC15

DIMENSIONAL CHECK OF X-TUBES

*check back of styles**174-210*

Comment: DIMENSIONAL CHECK OF X-TUBES

*etc. ~~check back of styles~~*

7.0

HAND FINISHING1

HAND FINISHING RESOURCE #1

*AWM 07-10-25 JD*

Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat per QSI 005 4.1

8.0

SPRAY PAINTING

SPRAY PAINTING



Comment: SPRAY PAINTING

1-Prime inside and outside with Immron per QSI 005 4.2

*ml 07 11 30 (1)*

9.0

QC14

INSPECT SPRAY PAINT



Comment: Inspect Spray Paint

*BT 07 - 12 - 01*

10.0

D2856600

Abrasion Strip



Comment: Qty.: 1.4895 f(s)/Unit Total : 1.4895 f(s)

Pick:

Qty Part number

Description

Batch

2 D2856-600(8.51") Abrasion Strip

*NA**rubber strip D 3595-063-450**as per DSR**B 35124**9396**BT 07-12-01**BT 07-12-01*

11.0

D28931

Support



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part number

Description

Batch

2 D2893-1

Support

*32777**BT 07-12-01*

12.0

MS2192024

Clamp(per MIL-DTL-8783C)



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Pick:

Qty Part number

Description

Batch

4 MS21920-24

Clamp

*102270**10103955 ml 07 12 04**26 as per DSR 9396**BT 07-12-01**Change back to -21 AB*

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	
07-12-03	12	MS21920-2G should be changed to -24 Permanent Change				<i>[Signature]</i> 07-12-03	<i>[Signature]</i> 07-12-03	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: ☒ Date: 07/12/03  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Tuesday, 8/21/2007 3:40:35 PM  
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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD X-TUBE EXT HEIGHT(-013)

Job Number: 34164

Part Number: D205596105

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



magnabon B 105379  
time 3:00



Comment: LANDING GEAR RESOURCE 1

1-Install abrasion strips per QSI 035 position using DT8582. Install supports and clamps per Dwg D205-596-105. Torque clamps to 80-100 in lb.

per ECN 1075  
07-12-01

14.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

07-12-04

15.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D205-596-105

Location: 0

PPP Rev: 0

7/12/06 self (12)

16.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

07-12-06

Job Completion



07-12-06

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

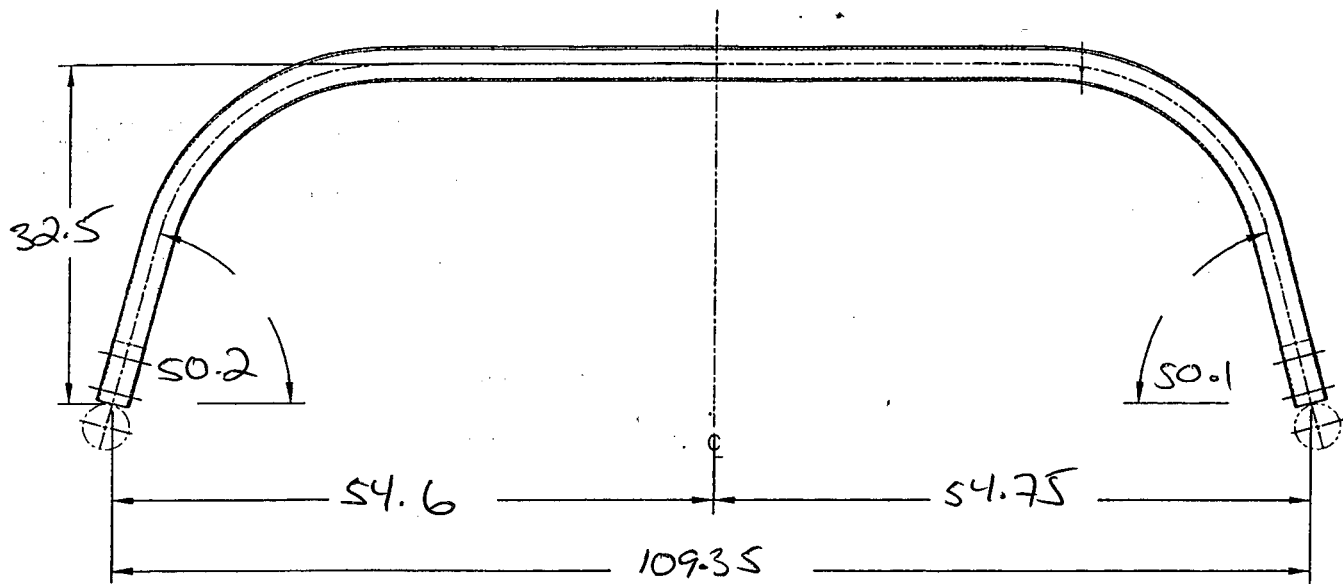
QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

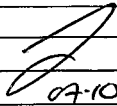
NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	34164
Description: Crosstube High-High Fwd		Part Number:	D205-596-105
Inspection Dwg: D205-596-105 Rev: A		Page 1 of 1	


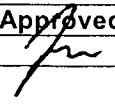
Required Dimension	Min	Max
Height	32.4	32.6
1/2 Span	54.6	54.8
Angle	49	52
Total Span	109.2	109.6



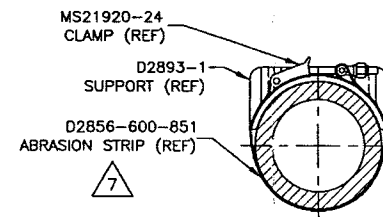
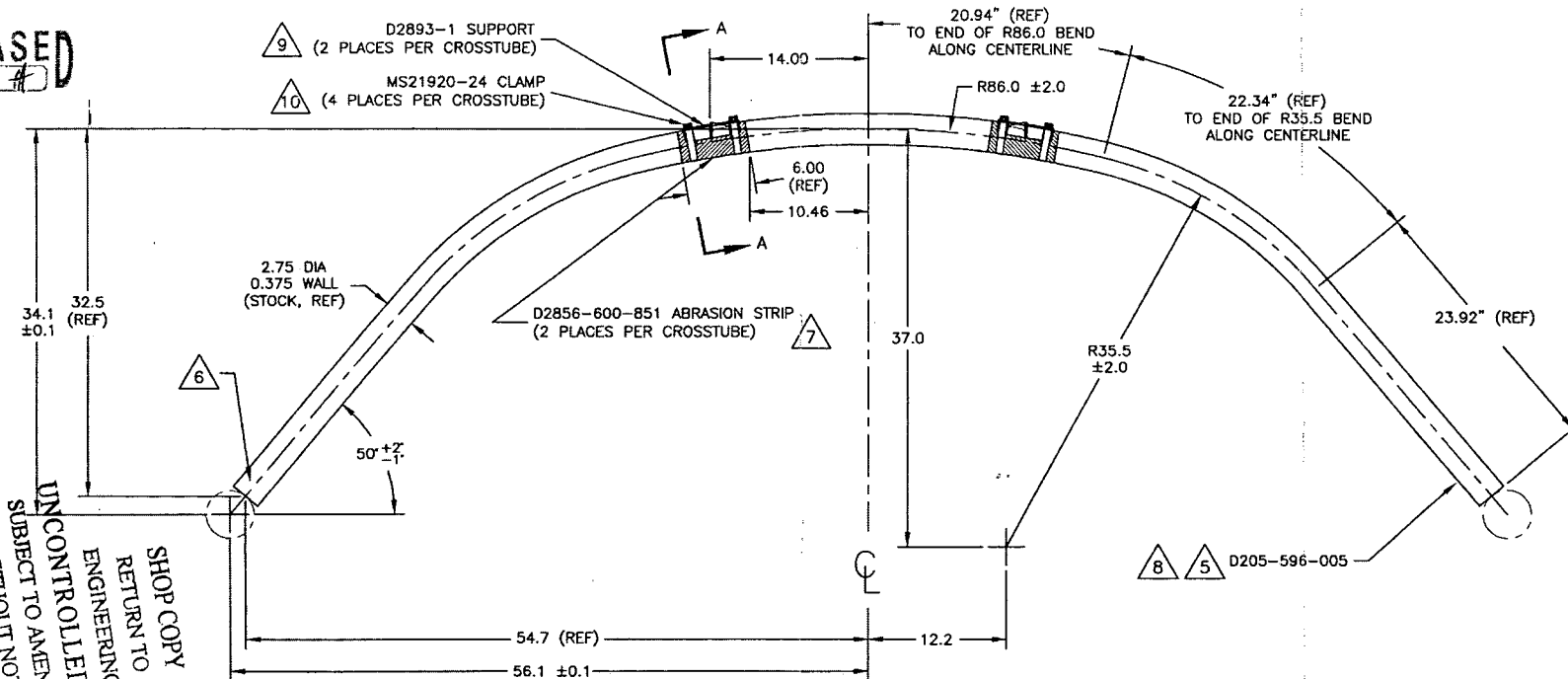
Comments

QC15 Inspection	
Date	

07.10.22

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM 	

RELEASED  
02-11-21



GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) MATERIAL: MANUFACTURE FROM D6005-180  
FINISHED LENGTH = 134.40
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 4) PART IS SYMMETRIC ABOUT CENTERLINE
- 5) BEND PROGRESSIVELY WITH A MINIMUM OF 3 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 6) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS
- 7) INSTALL D2856-600-851 ABRASION STRIP WITH A 0.13 (REF) GAP ON BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D2893-1 SUPPORT, PER QSI 035
- 8) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005\"

A		02.11.20	NEW ISSUE	
DESIGN	✓	DRAWN BY	DART DART AEROSPACE LTD. HAMPSHIRE, ONTARIO, CANADA	
CHECKED	✓	APPROVED	DRAWING NO.	REV. A
DATE	02.11.20	TITLE	D205-596-105	SHEET 1 OF 1
CROSSTUBE FWD EXTENDED			SCALE	1:10





# DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D205-594 Rev. C (AND EARLIER) AND INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D205-594 Rev. 2 (AND EARLIER)  
REF. CANADIAN STC: SH03-6  
REF. FAA STC: SR01742NY

For D205-596-101/-103 Crosstubes (ref. 39" Landing Gear) or D205-596-105/-107 Crosstubes (ref. 31" Landing Gear) at CHG 002 or later, the D2856-600-851/-1009 Abrasion Strips have been removed, the D2893-1 and D2940-1 Supports have been bonded onto the crosstubes using Magnobond 6398 and D3595-063-450/-530 Rubber Cushions have been installed underneath the MS21920-26/-30 Clamps. Amend Parts List of IIN-D205-594 Section 5 and ICA-D205-594 Section 32.8 as follows:

## Remove:

QTY -101	QTY -103	QTY -105	QTY -107	Part Number	Description
2		2		D2856-600-851	ABRASION STRIP
4		4		MS21920-24	CLAMP
	2		2	D2856-600-1009	ABRASION STRIP
	4		4	MS21920-28	CLAMP

## Add:

QTY -101	QTY -103	QTY -105	QTY -107	Part Number	Description
4		4		D3595-063-450	RUBBER CUSHION
4		4		MS21920-26	CLAMP
	4		4	D3595-063-530	RUBBER CUSHION
	4		4	MS21920-30	CLAMP

To prevent the supports from shifting on D205-596-101/-103/-105/-107 Crosstubes at CHG 001, the D2893-1 or D2940-1 Supports should be removed and re-installed as follows:

- Follow section 32.1 of ICA-D205-594 for the removal of the crosstubes from the helicopter.
- Remove the MS21920-24/-28 Clamps that fasten the D2893-1 and D2940-1 Supports from the crosstubes per Section 32.3 of ICA-D205-594.
- Remove the D2856-600-851/-1009 Abrasion Strips from the crosstube per section 32.5 of ICA-D205-594.
- Inspect the crosstube surface underneath the supports for corrosion and mechanical damage per items 5.3.1 and 5.3.2 of the 300 hour inspection. Repair damage within acceptable limits and touch up finish per item 5.3.3 of the 300 hour inspection.
- Inspect the supports for corrosion and mechanical damage per items 5.3.4 of the 300 hour inspection. Repair damage within acceptable limits and touch up finish per item 5.3.4 of the 300 hour inspection.
- Abrade area to which support will be applied with 400 grit sandpaper. Saturate a clean cloth with MEK or 4105S Wash'n'Wipe Degreaser or equivalent and wipe area until there is no residue.
- Apply a 0.03" to 0.06" thick layer of Magnobond 6398 underneath D2893-1 or D2940-1 Supports and re-install the Supports on the crosstube as shown in Figure 1. Install a D3595-063-450/-530 Rubber Cushion on each MS21920-26/-30 Clamp. Position and secure the D2893-1 or D2940-1 Supports on the crosstube using MS21920-26/-30 Clamps. Torque clamps to 80-100 in-lb. Let the D205-596-101/-103/-105/-107 Crosstube Assembly cure before re-installing the crosstube on the aircraft.
- Re-install the D205-596-101/-103/-105/-107 crosstube per section 32.2 of ICA-D205-594.

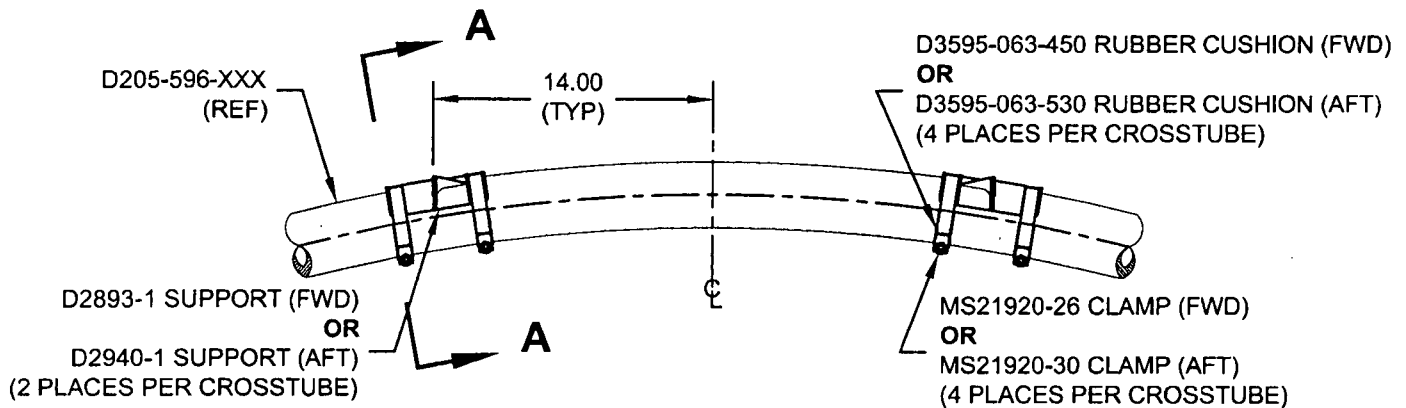
CANADA DEPARTMENT OF TRANSPORT AIRCRAFT CERTIFICATION --BRANCH: DAO # 01-O-01	
APPROVED	
BY: 	
D. SHEPHERD (DE # 02)	
DATE: 07.11.16	
CERT. NO.: SH03-6	
ISSUE NO.: 3	

A	NEW ISSUE	MB	07.11.16
REV.	DESCRIPTION	BY	DATE
DESIGN		DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN		DRAWING NO.	REV. A
CHECKED		DSI 9396	SHEET 1 OF 2
MFG. APPR.		TITLE	SCALE
APPROVED		CROSSTUBE SUPPORT CHANGE	NTS
DE APPR.		COPYRIGHT © 2007 BY DART AEROSPACE LTD	
DATE	07.11.16	THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

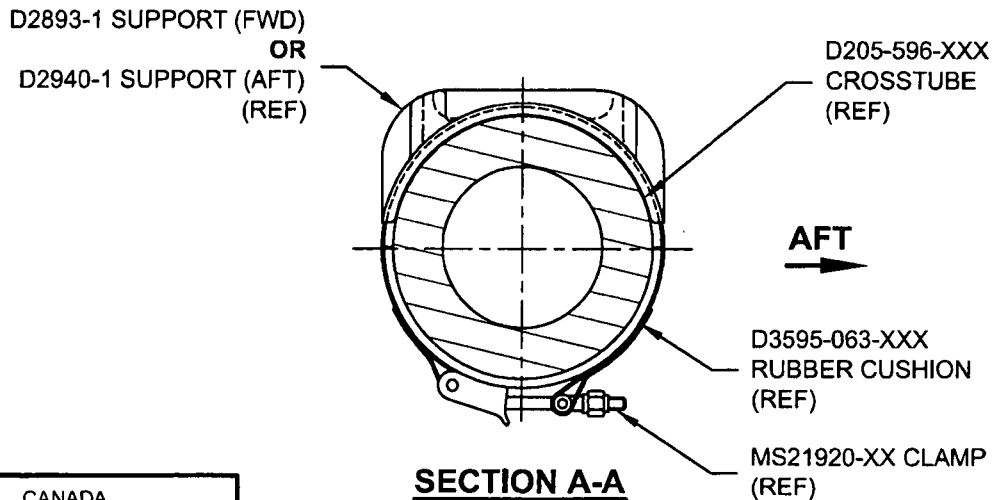
For customers who would like to upgrade their D205-596-101/-103/-105/-107 Crosstubes from CHG 001 to CHG 002, the following kits can be obtained from Dart:

---DSI 9396-XXX PARTS LIST

QTY -011	QTY -013	Part Number	Description
X		DSI 9396-011	FWD CROSSTUBE SUPPORT CHANGE (D205-596-101/-105 FWD CROSSTUBE)
	X	DSI 9396-013	AFT CROSSTUBE SUPPORT CHANGE (D205-596-103/-107 AFT CROSSTUBE)
4		D3595-063-450	RUBBER CUSHION
4		MS21920-26	CLAMP
	4	D3595-063-530	RUBBER CUSHION
	4	MS21920-30	CLAMP



**FIGURE 1: INSTALLATION OF SUPPORT ON CROSSTUBE**



CANADA  
DEPARTMENT OF TRANSPORT  
AIRCRAFT CERTIFICATION  
BRANCH  
DAO # 01-O-01

APPROVED  
BY: *[Signature]*  
D. SHEPHERD (DE # 02)

DATE: 07.11.16  
CERT. NO.: SH03-6  
ISSUE NO.: 3

DESIGN		<b>DART AEROSPACE LTD</b>	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	DSI 9396	SHEET 2 OF 2
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	CROSSTUBE SUPPORT CHANGE	NTS
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